

JUN 22 1993



Please note change of address:  
Box 1760  
Main Street  
Brattleboro, VT 05302  
214 Main Street  
~~XXXX~~  
(802)254-3677 (24 hrs.)  
(802)254-7630 (FAX)

June 21, 1993

Richard Fleming, Jr.  
Fleming Oil Company  
One Putney Road  
Brattleboro, VT 05301

RE: Quarterly Report January - March, 1993

Dear Mr. Fleming:

Enclosed please find the above mentioned report. Please excuse the delay due to technical problems with our computer system.

Should you have any questions please call me at 254-3677.

Sincerely,  
TRI-S, Inc. Environmental Consulting

*Kirsten H. Jeppesen*

Kirsten H. Jeppesen  
Environmental Technician

Enclosure

cc: Richard Spiese

KHJ/dan

\959\fleming.let

Branch Office:  
25 Pinney Street, Ellington, CT 06029 (203)875-2110 (24 hrs.)  
Fax: (203)875-8587 (24 hrs.)

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JUN 22 1993

**Quarterly Report  
January - March, 1993**

**Texaco Station  
Route 9  
West Brattleboro, Vermont 05301**

*Prepared For:*

**Fleming Oil Company  
1 Putney Road  
Brattleboro, VT 05301**

June 14, 1993

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## **1. SITE ACTIVITIES SUMMARY**

### ***1.1 Gauging and Sampling of Groundwater***

- Monthly groundwater levels were measured on January 13, February 10, and March 2, 1993.
- Quarterly sampling of all monitoring wells for laboratory analysis was completed on April 5, 1993. All laboratory results are included in Appendix A.
- Biweekly sampling of the groundwater system influent and effluent was completed on January 13 and 28; February (the system was down); and March 8 and 24, 1993 (see Appendix A). All sampling, except for February, was completed as required per the State's Pretreatment Discharge Permit #3-1342.

### ***1.2 System Checks***

- Groundwater treatment system checks occurred on January 13, 22, and 28; February 2 and 10; and March 2, 8, 16, 24, and 30, 1993. The system was shut down on February 10, 1993 due to electrical damage caused by a local power failure. The replacement parts needed had been discontinued and proved difficult to locate. Once obtained, replacement parts were installed and the system was restarted on March 8, 1993.

## **2. TOTAL PRODUCT RECOVERED TO DATE**

Aside from the product recovered through the Air Stripper, no additional product was collected or observed in the recovery well during this quarter.

### 3. DATA SUMMARY

#### 3.1 Groundwater Sampling

Sampling results from April 4th, showed non-detectable levels of all contaminants in wells FO-1, FO-7, and ECS-10. Well FO-2 showed 76 ug/l of MTBE. Wells FO-3, FO-4, and FO-5 showed reduced overall contaminant levels. A summary of monitoring well sample analysis results are presented in Table I below. Complete laboratory reports are included in Appendix A. A BTEX and MTBE Isoconcentration Map is included in Appendix B.

**TABLE I**  
**MONITORING WELL SAMPLING RESULTS.**

Date	Compound	FO-1	FO-2	FO-3	FO-4	FO-5	FO-6	FO-7	ECS-10	FB
04/05/93	Benzene	ND	ND	1,600	1,100	280	13	ND	ND	ND
	Toluene	ND	ND	3,100	4,100	7	ND	ND	ND	ND
	Ethylbenzene	ND	ND	250	110	41	ND	ND	ND	ND
	Xylene	ND	ND	2,200	7,100	95	ND	ND	ND	ND
	MTBE	ND	76	1,300	190	330	81	ND	ND	ND
12/16/92	Benzene	ND	ND	3,900	330	490	77	ND	420	ND
	Toluene	ND	ND	15,000	8,000	ND	ND	ND	5	ND
	Ethylbenzene	ND	ND	1,900	670	190	1	ND	120	ND
	Xylene	ND	1	7,600	8,600	280	ND	ND	190	ND
	MTBE	ND	150	1,700	16	760	2,500	ND	1,100	ND
09/21/92	Benzene	ND	ND	4,600	480	340	140	ND	670	ND
	Toluene	2	ND	18,000	9,600	10	ND	ND	5	ND
	Ethylbenzene	ND	ND	1,900	5,600	80	ND	ND	170	ND
	Xylene	4	ND	9,000	15,000	180	5	ND	280	ND
	MTBE	ND	210	4,600	160	510	3,100	ND	2,300	ND
07/06/92	Benzene	ND	ND	7,200	2,000	820	200	ND	350	ND
	Toluene	ND	ND	17,000	11,000	67	2	ND	7	9
	Ethylbenzene	ND	ND	1,400	780	120	5	ND	58	ND
	Xylene	ND	ND	9,800	14,000	260	2	ND	52	14
	MTBE	ND	53	ND	ND	1,300	730	ND	560	ND

All Results Reported in Micrograms per Liter (ug/l)

ND = None Detected

FP = Free Product

Blank = No Data, Not Sampled

FB = Field Blank

### 3.2 Influent/Effluent Sampling

Results of influent/effluent sampling reveal the effectiveness of the air stripping unit. Contaminant levels were non-detectable in effluent samples taken on January 13, 1993. Effluent contaminant levels, from samples taken on January 28th, March 24th, and April 23, 1993 were below State of Vermont Drinking Water Standards. Effluent samples taken on March 10, 1993 revealed a benzene level of 12 ug/l which is out of compliance with the accepted state standards. Upon obtaining this non-complying sampling result TRI-S contacted Brian Kooiker of the Vermont DEC Permits and Compliance Section and described the situation. The samples on March 10th were taken immediately after the groundwater remediation system was started back up, after having been down for electrical repairs. As a result the water that was sampled was the first water through the air stripper and was not fully treated. Subsequent samples taken on March 24th show that the effluent is within compliance. Brian Kooiker felt that the non-complying sample was not a problem as long as elevated contaminant levels in the effluent were not ongoing. Results from April 5, 1993, show no effluent data because the system was not operating. The influent sample was collected directly from the recovery well. Groundwater remediation system sampling results are summarized in Table II, full laboratory reports are included in Appendix A.

**TABLE II**  
**WATER TREATMENT SYSTEM SAMPLING RESULTS**

Date	Compound	Influent (RW-1)	Effluent
04/05/93	Benzene	2,800	
	Toluene	5,500	
	Ethylbenzene	840	
	Xylene	3,900	
	MTBE	1,600	
03/24/93	Benzene	2,500	ND
	Toluene	5,000	1
	Ethylbenzene	760	ND
	Xylene	4,300	ND
	MTBE	1,100	ND
03/10/93	Benzene	2,300	12
	Toluene	4,900	1
	Ethylbenzene	520	ND
	Xylene	5,100	ND
	MTBE	1,300	310
01/28/93	Benzene	3,600	1
	Toluene	7,300	2
	Ethylbenzene	1,100	ND
	Xylene	5,300	2
	MTBE	4,000	92
01/13/93	Benzene	1,700	ND
	Toluene	4,200	ND
	Ethylbenzene	1,100	ND
	Xylene	2,600	ND
	MTBE	2,000	ND

All results reported in micrograms per liter (ug/l)  
MTBE = Methyl-T-Butyl-Ether

ND = Non-Detectable

Blank = no data, not sampled

### 3.3 Groundwater Levels

Groundwater potentiometric maps for January 13, February 10, and March 2, 1993, are shown in Appendix C. The groundwater flow remains generally the same as the previous quarter (October - December, 1992). Groundwater elevations decreased during January and February then increased in March.

**TABLE III**  
**GROUNDWATER POTENTIOMETRIC TABLE**

Date	FO-1	FO-2	FO-3	FO-4	FO-5	FO-6	FO-7	ECS-10
Top of PVC	99.81	96.92	96.50	98.07	92.55	90.41	90.57	92.60
03/02/93	95.85	snow bank	92.25	94.55	88.22	84.93	85.10	snow bank
02/10/93	95.84	90.94	92.07	94.46	88.04	85.00	85.23	88.60
01/13/93	95.97	90.96	92.20	94.77	88.39	85.43	85.79	88.86
12/16/92	95.97	91.18	92.54	94.65	88.49	85.30	85.27	
11/25/92	96.19	91.52	92.72	95.59	89.31	85.99	86.03	90.12

*All Results Measured in Feet from an Arbitrary Datum Point*

*Blank = No Data, Not Measured*

### 3.4 Flow Rate

As required by the Discharge Permit, the groundwater treatment system flow rate is monitored and recorded monthly in the Form WR-43 summary report. Flow rate totals and averages for this quarter are as follows:

- In January the system ran for 31 days, with a total flow of 42,250 gallons. Daily flow averaged 1,363 gallons per day (gpd).
- In February, the system ran for 8 days, with a total flow of 8,772 gallons. Average daily flow was 1,097 gpd.
- In March, the system ran for 23 days, with a total flow of 33,144 gallons. Average daily flow was 1,441 gpd.
- Average daily flow for the quarter was 1,357 gpd.

#### **4. CONCLUSIONS**

Analytical sampling data for this quarter shows a significant decrease in contaminant levels in all monitoring well samples when compared to those samples from the previous quarter. However, contaminant levels in the recovery well (RW-1) have increased, thus increasing the amount of contaminants in the groundwater that are being removed when pumped through the remediation system. The influent/effluent results remain stable with the exception of the higher March 10 results, which returned to previous levels upon more recent sampling. Groundwater flow is in the same direction. Flow rates have varied in the three months of this quarter, with January's numbers reflecting a full month of operation and a high flow rate throughout the month. February's flow rates reflect electrical problems combined with lower seasonal flow in the groundwater, resulting in a low monthly flow. March flow rates reflect an overall increase in flow due to seasonal changes in groundwater.

#### **5. RECOMMENDATIONS**

TEC makes no further recommendations at this time.

**APPENDIX A**

**LABORATORY RESULTS**

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A N A L Y T I C A L   D A T A

S U M M A R Y

Report Date: 04/15/93

Account: TRI-S Environmental Consulting  
Address: P.O. Box 1760  
Brattleboro, VT 05302  
802-254-3677

Project Manager:  
Project Name: Fleming Oil (959) (4-5-93)  
Project No.: 959

**Sample Information:**

Laboratory ID Client ID

30972040-001 FO-1-4593-959  
30972040-002 FO-2-4593-959  
30972040-003 FO-3-4593-959  
30972040-004 FO-4-4593-959  
30972040-005 FO-5-4593-959  
30972040-006 FO-6-4593-959  
30972040-007 FO-7-4593-959

Laboratory ID Client ID

30972040-008 ECS-10-4593-959  
30972040-009 INT-4593-959  
30972040-010 FO-11-4593-959  
30972040-011 FO-12-4593-959  
30972040-012 FO-13-4593-959  
30972040-013 QC Report

updated in computer  
4/28/93

*Reviewed by*



Stephen DiMattei  
Quality Assurance Officer

Lab Certifications

EPA ID: No. MA059  
Massachusetts: No. 313  
Maine: Reciprocity  
New York: ELAP No. 11116

Connecticut: No. PII 0515  
Florida: QA Plan No. 900437G  
New Hampshire: No. 24190-A,R  
Rhode Island: Reciprocity



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Matrix Analytical, Inc.  
106 South Street  
Hopkinton, MA 01748  
1 800 3-MATRIX

## F I N A L R E P O R T

Client Information

Account:	TRI-S Environmental Consulting	Project Name:	Fleming Oil (959) (4-5-93)
Address:	P.O. Box 1760	Project Number:	959
	Brattleboro, VT 05302	Project Manager:	
		Sampler Name:	TRI-S Environmental Cons.

Sample Information

Lab ID:	30972040-001	Date Sampled:	04/05/93 14:50
Client Id:	FO-1-4593-959	Date Received:	04/05/93 : 0
Matrix:	Water	Date Reported:	04/15/93

Analytical Parameter	Result	Unit	Detection Limit	Method No.	Analyst	Date Analyzed
<b>VOLATILE ORGANICS</b>						
Benzene	ND	ug/l	1	8020	kl	04/14/93
Chlorobenzene	ND	ug/l	1	8020	kl	04/14/93
1,2-Dichlorobenzene	ND	ug/l	1	8020	kl	04/14/93
1,3-Dichlorobenzene	ND	ug/l	1	8020	kl	04/14/93
1,4-Dichlorobenzene	ND	ug/l	1	8020	kl	04/14/93
Ethylbenzene	ND	ug/l	1	8020	kl	04/14/93
MTBE	ND	ug/l	5	8020	kl	04/14/93
Toluene	ND	ug/l	1	8020	kl	04/14/93
Xylene	ND	ug/l	1	8020	kl	04/14/93
<b>Surrogate Studies - Volatiles</b>						
Bromofluorobenzene (602/8020)	99	Percent			kl	04/14/93



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## F I N A L R E P O R T

Client Information

Account:	TRI-S Environmental Consulting	Project Name:	Fleming Oil (959) (4-5-93)
Address:	P.O. Box 1760	Project Number:	959
	Brattleboro, VT 05302	Project Manager:	
		Sampler Name:	TRI-S Environmental Cons.

Sample Information

Lab ID:	30972040-002	Date Sampled:	04/05/93 15:37
Client Id:	FO-2-4593-959	Date Received:	04/05/93 : 0
Matrix:	Water	Date Reported:	04/15/93

Analytical Parameter	Result	Unit	Detection Limit	Method No.	Analyst	Date Analyzed
<b>VOLATILE ORGANICS</b>						
Benzene	ND	ug/l	1	8020	kl	04/13/93
Chlorobenzene	ND	ug/l	1	8020	kl	04/13/93
1,2-Dichlorobenzene	ND	ug/l	1	8020	kl	04/13/93
1,3-Dichlorobenzene	ND	ug/l	1	8020	kl	04/13/93
1,4-Dichlorobenzene	ND	ug/l	1	8020	kl	04/13/93
Ethylbenzene	ND	ug/l	1	8020	kl	04/13/93
MTBE	76	ug/l	5	8020	kl	04/13/93
Toluene	ND	ug/l	1	8020	kl	04/13/93
Xylene	ND	ug/l	1	8020	kl	04/13/93
<b>Surrogate Studies - Volatiles</b>						
Bromofluorobenzene (602/8020)	97	Percent			kl	04/13/93



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## FINAL REPORT

Client Information

Account:	TRI-S Environmental Consulting	Project Name:	Fleming Oil (959) (4-5-93)
Address:	P.O. Box 1760	Project Number:	959
	Brattleboro, VT 05302	Project Manager:	
		Sampler Name:	TRI-S Environmental Cons.

Sample Information

Lab ID:	30972040-003	Date Sampled:	04/05/93 15:49
Client Id:	FO-3-4593-959	Date Received:	04/05/93 : 0
Matrix:	Water	Date Reported:	04/15/93

Analytical Parameter	Result	Unit	Detection Limit	Method No.	Analyst	Date Analyzed
<b>VOLATILE ORGANICS</b>						
Benzene	1,600	ug/l	50	8020	kl	04/14/93
Chlorobenzene	ND	ug/l	50	8020	kl	04/14/93
1,2-Dichlorobenzene	ND	ug/l	50	8020	kl	04/14/93
1,3-Dichlorobenzene	ND	ug/l	50	8020	kl	04/14/93
1,4-Dichlorobenzene	ND	ug/l	50	8020	kl	04/14/93
Ethylbenzene	250	ug/l	50	8020	kl	04/14/93
MTBE	1,300	ug/l	250	8020	kl	04/14/93
Toluene	3,100	ug/l	50	8020	kl	04/14/93
Xylene	2,200	ug/l	50	8020	kl	04/14/93

Surrogate Studies - Volatiles

Bromofluorobenzene (602/8020)	116	Percent	kl	04/14/93
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F I N A L R E P O R T

*Client Information*

Account: TRI-S Environmental Consulting  
Address: P.O. Box 1760  
Brattleboro, VT 05302

Project Name: Fleming Oil (959) (4-5-93)  
Project Number: 959  
Project Manager:  
Sampler Name: TRI-S Environmental Cons.

*Sample Information*

Lab ID: 30972040-004  
Client Id: FO-44593-959  
Matrix: Water

Date Sampled: 04/05/93 15:44  
Date Received: 04/05/93 : 0  
Date Reported: 04/15/93

Analytical Parameter	Result	Unit	Detection Limit	Method No.	Analyst	Date Analyzed
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**VOLATILE ORGANICS**

Benzene	1,100	ug/l	20	8020	kl	04/14/93
Chlorobenzene	ND	ug/l	20	8020	kl	04/14/93
1,2-Dichlorobenzene	ND	ug/l	20	8020	kl	04/14/93
1,3-Dichlorobenzene	ND	ug/l	20	8020	kl	04/14/93
1,4-Dichlorobenzene	ND	ug/l	20	8020	kl	04/14/93
Ethylbenzene	110	ug/l	20	8020	kl	04/14/93
MTBE	190	ug/l	100	8020	kl	04/14/93
Toluene	4,100	ug/l	20	8020	kl	04/14/93
Xylene	7,100	ug/l	20	8020	kl	04/14/93

Surrogate Studies - Volatiles

Bromofluorobenzene (602/8020)	98	Percent	kl	04/14/93
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*Client Information*

Account:	TRI-S Environmental Consulting	Project Name:	Fleming Oil (959) (4-5-93)
Address:	P.O. Box 1760	Project Number:	959
	Brattleboro, VT 05302	Project Manager:	
		Sampler Name:	TRI-S Environmental Cons.

*Sample Information*

Lab ID:	30972040-005	Date Sampled:	04/05/93 15:28
Client Id:	FO-5-4593-959	Date Received:	04/05/93 : 0
Matrix:	Water	Date Reported:	04/15/93

Analytical Parameter	Result	Unit	Detection Limit	Method No.	Analyst	Date Analyzed
<b>VOLATILE ORGANICS</b>						
Benzene	280	ug/l	1	8020	k1	04/13/93
Chlorobenzene	ND	ug/l	1	8020	k1	04/13/93
1,2-Dichlorobenzene	ND	ug/l	1	8020	k1	04/13/93
1,3-Dichlorobenzene	ND	ug/l	1	8020	k1	04/13/93
1,4-Dichlorobenzene	ND	ug/l	1	8020	k1	04/13/93
Ethylbenzene	41	ug/l	1	8020	k1	04/13/93
MTBE	330	ug/l	5	8020	k1	04/13/93
Toluene	7	ug/l	1	8020	k1	04/13/93
Xylene	95	ug/l	1	8020	k1	04/13/93

*Surrogate Studies - Volatiles*

Bromofluorobenzene (602/8020)	101	Percent	k1	04/13/93
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Client Information

Account:	TRI-S Environmental Consulting	Project Name:	Fleming Oil (959) (4-5-93)
Address:	P.O. Box 1760	Project Number:	959
	Brattleboro, VT 05302	Project Manager:	
		Sampler Name:	TRI-S Environmental Cons.

Sample Information

Lab ID:	30972040-006	Date Sampled:	04/05/93 15:02
Client Id:	FO-6-4593-959	Date Received:	04/05/93 : 0
Matrix:	Water	Date Reported:	04/15/93

Analytical Parameter	Result	Unit	Detection Limit	Method No.	Analyst	Date Analyzed
<b>VOLATILE ORGANICS</b>						
Benzene	13	ug/l	1	8020	k1	04/13/93
Chlorobenzene	ND	ug/l	1	8020	k1	04/13/93
1,2-Dichlorobenzene	ND	ug/l	1	8020	k1	04/13/93
1,3-Dichlorobenzene	ND	ug/l	1	8020	k1	04/13/93
1,4-Dichlorobenzene	ND	ug/l	1	8020	k1	04/13/93
Ethylbenzene	ND	ug/l	1	8020	k1	04/13/93
MTBE	81	ug/l	5	8020	k1	04/13/93
Toluene	ND	ug/l	1	8020	k1	04/13/93
Xylene	ND	ug/l	1	8020	k1	04/13/93
<b>Surrogate Studies - Volatiles</b>						
Bromofluorobenzene (602/8020)	97	Percent			k1	04/13/93



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Client Information

Account:	TRI-S Environmental Consulting	Project Name:	Fleming Oil (959) (4-5-93)
Address:	P.O. Box 1760	Project Number:	959
	Brattleboro, VT 05302	Project Manager:	
		Sampler Name:	TRI-S Environmental Cons.

Sample Information

Lab ID:	30972040-007	Date Sampled:	04/05/93 15:07
Client Id:	PO-7-4593-959	Date Received:	04/05/93 : 0
Matrix:	Water	Date Reported:	04/15/93

Analytical Parameter	Result	Unit	Detection Limit	Method No.	Analyst	Date Analyzed
<b>VOLATILE ORGANICS</b>						
Benzene	ND	ug/l	1	8020	kl	04/13/93
Chlorobenzene	ND	ug/l	1	8020	kl	04/13/93
1,2-Dichlorobenzene	ND	ug/l	1	8020	kl	04/13/93
1,3-Dichlorobenzene	ND	ug/l	1	8020	kl	04/13/93
1,4-Dichlorobenzene	ND	ug/l	1	8020	kl	04/13/93
Ethylbenzene	ND	ug/l	1	8020	kl	04/13/93
MTBE	ND	ug/l	5	8020	kl	04/13/93
Toluene	ND	ug/l	1	8020	kl	04/13/93
Xylene	ND	ug/l	1	8020	kl	04/13/93

Surrogate Studies - Volatiles

BromoFluorobenzene (602/8020)	96	Percent	kl	04/13/93
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Matrix Analytical, Inc.  
106 South Street  
Hopkinton, MA 01748  
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F I N A L R E P O R T

*Client Information*

Account:	TRI-S Environmental Consulting	Project Name:	Fleming Oil (959) (4-5-93)
Address:	P.O. Box 1760	Project Number:	959
	Brattleboro, VT 05302	Project Manager:	
		Sampler Name:	TRI-S Environmental Cons.

*Sample Information*

Lab ID:	30972040-008	Date Sampled:	04/05/93 15:23
Client Id:	ECS-10-4593-959	Date Received:	04/05/93 : 0
Matrix:	Water	Date Reported:	04/15/93

Analytical Parameter	Result	Unit	Detection Limit	Method No.	Analyst	Date Analyzed
<b>VOLATILE ORGANICS</b>						
Benzene	ND	ug/l	1	8020	kl	04/13/93
Chlorobenzene	ND	ug/l	1	8020	kl	04/13/93
1,2-Dichlorobenzene	ND	ug/l	1	8020	kl	04/13/93
1,3-Dichlorobenzene	ND	ug/l	1	8020	kl	04/13/93
1,4-Dichlorobenzene	ND	ug/l	1	8020	kl	04/13/93
Ethylbenzene	ND	ug/l	1	8020	kl	04/13/93
MTBE	ND	ug/l	1	8020	kl	04/13/93
Toluene	ND	ug/l	5	8020	kl	04/13/93
Xylene	ND	ug/l	1	8020	kl	04/13/93

Surrogate Studies - Volatiles

Bromofluorobenzene (602/8020)	101	Percent	kl	04/13/93
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Matrix Analytical, Inc.  
106 South Street  
Hopkinton, MA 01748  
1 800 3-MATRIX

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F I N A L R E P O R T

*Client Information*

Account:	TRI-S Environmental Consulting	Project Name:	Fleming Oil (959) (4-5-93)
Address:	P.O. Box 1760	Project Number:	959
	Brattleboro, VT 05302	Project Manager:	
		Sampler Name:	TRI-S Environmental Cons.

*Sample Information*

Lab ID:	30972040-009	Date Sampled:	04/05/93 :
Client Id:	INP-4593-959	Date Received:	04/05/93 : 0
Matrix:	Water	Date Reported:	04/15/93

Analytical Parameter	Result	Unit	Detection Limit	Method No.	Analyst	Date Analyzed
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VOLATILE ORGANICS

Benzene	2,800	ug/l	10	8020	k1	04/13/93
Chlorobenzene	ND	ug/l	10	8020	k1	04/13/93
1,2-Dichlorobenzene	ND	ug/l	10	8020	k1	04/13/93
1,3-Dichlorobenzene	ND	ug/l	10	8020	k1	04/13/93
1,4-Dichlorobenzene	ND	ug/l	10	8020	k1	04/13/93
Ethylbenzene	840	ug/l	10	8020	k1	04/13/93
MTBE	1,600	ug/l	50	8020	k1	04/13/93
Toluene	5,500	ug/l	10	8020	k1	04/13/93
Xylene	3,900	ug/l	10	8020	k1	04/13/93

Surrogate Studies - Volatiles

Bromofluorobenzene (602/8020)	102	Percent		k1	04/13/93
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Matrix Analytical, Inc.  
106 South Street  
Hopkinton, MA 01748  
1 800 3-MATRIX

## FINAL REPORT

## Client Information

Account:	TRI-S Environmental Consulting	Project Name:	Fleming Oil (959) (4-5-93)
Address:	P.O. Box 1760	Project Number:	959
	Brattleboro, VT 05302	Project Manager:	
		Sampler Name:	TRI-S Environmental Cons.

## Sample Information

Lab ID:	30972040-010	Date Sampled:	04/05/93 15:51
Client Id:	FO-11-4593-959	Date Received:	04/05/93 : 0
Matrix:	Water	Date Reported:	04/15/93

Analytical Parameter	Result	Unit	Detection Limit	Method No.	Analyst	Date Analyzed
<b>VOLATILE ORGANICS</b>						
Benzene	1,500	ug/l	50	8020	kj	04/14/93
Chlorobenzene	ND	ug/l	50	8020	kj	04/14/93
1,2-Dichlorobenzene	ND	ug/l	50	8020	kj	04/14/93
1,3-Dichlorobenzene	ND	ug/l	50	8020	kj	04/14/93
1,4-Dichlorobenzene	ND	ug/l	50	8020	kj	04/14/93
Ethylbenzene	250	ug/l	50	8020	kj	04/14/93
MTBE	1,200	ug/l	250	8020	kj	04/14/93
Toluene	3,000	ug/l	50	8020	kj	04/14/93
Xylene	2,400	ug/l	50	8020	kj	04/14/93
<b>Surrogate Studies - Volatiles</b>						
Bromofluorobenzene (602/8020)	104	Percent			kj	04/14/93
			Detection limit due to a series of late eluting non-target peaks usually found in the presence of petroleum hydrocarbon type compounds.			



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F I N A L R E P O R T

*Client Information*

Account:	TRI-S Environmental Consulting	Project Name:	Fleming Oil (959) (4-5-93)
Address:	P.O. Box 1760	Project Number:	959
	Brattleboro, VT 05302	Project Manager:	
		Sampler Name:	TRI-S Environmental Cons.

*Sample Information*

Lab ID:	30972040-011	Date Sampled:	04/05/93 15:56
Client Id:	FO-12-4593-959	Date Received:	04/05/93 :0
Matrix:	Water	Date Reported:	04/15/93

Analytical Parameter	Result	Unit	Detection Limit	Method No.	Analyst	Date Analyzed
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VOLATILE ORGANICS

Benzene	ND	ug/l	1	8020	kl	04/13/93
Chlorobenzene	ND	ug/l	1	8020	kl	04/13/93
1,2-Dichlorobenzene	ND	ug/l	1	8020	kl	04/13/93
1,3-Dichlorobenzene	ND	ug/l	1	8020	kl	04/13/93
1,4-Dichlorobenzene	ND	ug/l	1	8020	kl	04/13/93
Ethylbenzene	ND	ug/l	1	8020	kl	04/13/93
MTBE	ND	ug/l	5	8020	kl	04/13/93
Toluene	ND	ug/l	1	8020	kl	04/13/93
Xylene	ND	ug/l	1	8020	kl	04/13/93

Surrogate Studies - Volatiles

Bromofluorobenzene (602/8020)	97	Percent	kl	04/13/93
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 Hopkinton, MA 01748  
 1 800 3-MATRIX

**FINAL REPORT*****Client Information***

Account:	TRI-S Environmental Consulting	Project Name:	Fleming Oil (959) (4-5-93)
Address:	P.O. Box 1760	Project Number:	959
	Brattleboro, VT 05302	Project Manager:	
		Sampler Name:	TRI-S Environmental Cons.

***Sample Information***

Lab ID:	30972040-012	Date Sampled:	04/05/93 10:30
Client Id:	FO-13-4593-959	Date Received:	04/05/93 : 0
Matrix:	Water	Date Reported:	04/15/93

Analytical Parameter	Result	Unit	Detection Limit	Method No.	Analyst	Date Analyzed
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**VOLATILE ORGANICS**

Benzene	ND	ug/l	1	8020	kl	04/13/93
Chlorobenzene	ND	ug/l	1	8020	kl	04/13/93
1,2-Dichlorobenzene	ND	ug/l	1	8020	kl	04/13/93
1,3-Dichlorobenzene	ND	ug/l	1	8020	kl	04/13/93
1,4-Dichlorobenzene	ND	ug/l	1	8020	kl	04/13/93
Ethylbenzene	ND	ug/l	1	8020	kl	04/13/93
MTBE	ND	ug/l	5	8020	kl	04/13/93
Toluene	ND	ug/l	1	8020	kl	04/13/93
Xylene	ND	ug/l	1	8020	kl	04/13/93

**Surrogate Studies - Volatiles**

BromoFluorobenzene (602/8020)	96	Percent	kl	04/13/93
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## FINAL REPORT

Client Information

Account:	TRI-S Environmental Consulting	Project Name:	Fleming Oil (959) (4-5-93)
Address:	P.O. Box 1760	Project Number:	959
	Brattleboro, VT 05302	Project Manager:	
		Sampler Name:	

Sample Information

Lab ID:	30972040-013	Date Sampled:	04/05/93
Client Id:	QC-Report	Date Received:	04/05/93 : 0
Matrix:	Water	Date Reported:	04/15/93
Comment:	Water		

Analytical Parameter	Result	Detection Unit	Method Limit	No.	Analyst	Date Analyzed
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METHOD BLANK - VOLATILES

Method Blank	ND	ug/l	8020/602
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METHOD SUMMARIES

Volatile organic analysis is performed using H/P 5995 or 5970 GC/MS, Tekmar purge and trap, and ALS autosampler. Chromatography incorporates packed and megabore columns. Data reduction is performed on RTE 1000 and ChemStation systems. Tuning is based on BFB standards. Procedural guidelines follow EPA 624 or SW846 for all analyses. Aromatic volatiles listed in VOA 8020 are analyzed using GC/MS systems.

METHOD REFERENCES

1. Test Methods For Evaluating Solid Waste: Physical Chemical Methods. EPA SW 846. November 1986.
2. Methods For Chemical Analysis of Water and Wastes. EPA 600/4-79-200. Revised March 1983.
3. Standard Methods For Examination of Water and Wastewater. APHA-AWWA-WACF., 16th Edition. 1985.

## CHAIN-OF-CUSTODY RECORD

CLIENT: TRI-S Environmental Consulting  
ADDRESS: PO Box 1760  
Brattleboro VT 05302  
CLIENT CONTACT/PHONE: (802) 254-3677  
PROJECT NAME: Fleming Hill Wkst NO.: 754  
LAB CONTACT: Michelle Higgins EXT. NO.: 302

\*TYPE: W = water; GW = groundwater; DW = drinking water; SW = surface water; S = soil; SED = sediment; SL = sludge; DS = drum sample; O = oil; WL = waste; X = other (please describe)

SPECIAL PRICE QUOTE FOR THIS PROJECT?  
SPECIAL INSTRUCTIONS / NOTES:

NO YES NUMBER

MATRIX ANALYTICAL USE ONLY	RElinquished BY	RECEIVED BY	DATE	TIME	COMMENTS
Samples: 1) were shipped / hand-delivered / ambient / chilled 2) were received preserved / unpreserved 3) were received intact / broken / leaking 4) were received within / past holding times 5) agreed with COC form / discrepancies were present 6) were sealed / not sealed with COC tape; tape was broken / intact 7) were in cooler sealed / not sealed with COC tape; tape was broken / intact	P.M. S. D.M.S. A.C.	Donna M. Scott L.J. Anderson Gloria Cheney	4/5/93 4-5-93	11:45 4:30	
NOTES:	SAMPLER'S INITIALS				MATRIX ANALYTICAL, INC. 106 South Street Naperville, IL 601748 (800) 3-MATRIX
	KH AAS				PAGE 1 OF 1

## CHAIN-OF-CUSTODY RECORD

CLIENT: TRI-S Environmental Consulting  
 ADDRESS: PO Box 1760  
 Brattleboro VT 05302  
 CLIENT CONTACT/PHONE: (802) 254-3677  
 PROJECT NAME: Fleming Oil W. Bath NO: 959  
 LABS CONTACT: Michelle Higgins EXT. NO: 302

LAB ID (LAB USE ONLY)	SAMPLE ID / CLIENT DESCRIPTION	TYPE*	COLLECTION DATE / TIME		ANALYSES REQUESTED	TOTALS
			DATE	TIME		
FC-1	4-593-959	GW	4/5/93	2:56		
FC-2	4-593-959	"		3:37		
FC-3	"	"		3:41		
FC-4	"	"		3:44		
FC-5	"	"		3:28		
FC-6	"	"		3:02		
FC-7	"	"		3:07		
FC-8	"	"		3:23		
FC-9	"	"		4:00		
TM-	"	"			Next Sample	
Lff-	"	"				
			TOTALS:	18		

IMPORTANT - INDICATE THE NUMBER OF BOTTLES PER SAMPLE IN THE SPACES BELOW

COMMENTS

\*TYPE: W = water; GW = groundwater; DW = drinking water; SW = surface water; S = soil; SED = sediment; SL = sludge; DS = drum sample; O = oil; WL = wipe; X = other (please describe)

SPECIAL PRICE QUOTE FOR THIS PROJECT?  
 SPECIAL INSTRUCTIONS / NOTES:

NO YES NUMBER:

MATRIX ANALYTICAL USE ONLY	
Samples: 1) were shipped / hand-delivered / ambient / chilled 2) were received preserved / unpreserved 3) were received intact / broken / leaking 4) were received within / past holding times 5) agreed with COC form / discrepancies were present 6) were sealed / not sealed with COC tape; tape was broken / intact 7) were in cooler sealed / not sealed with COC tape; tape was broken / intact	
NOTES:	

REUNGUISHED BY	RECEIVED BY	DATE	TIME	COMMENTS
R. E. J. (Signature)	Monica M. Hall	4/5/93	11:45	
D. M. S. (Signature)	John Anderson			
Wm. Anderson	Monica Cheney	4/5/93	4:30	
SAMPLER'S INITIALS	KiS AMS			
		MATRIX ANALYTICAL, INC. 106 South Street Naperville, IL 60540 (800) 3-MATRIX		
		EPA 9070 C-00-001		
		PAGE 1 OF 1		

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A N A L Y T I C A L   D A T A

S U M M A R Y

**Report Date:** 04/03/93

**Account:** TRI-S Environmental Consulting  
**Address:** P.O. Box 1760  
Brattleboro, VT 05302  
802-254-3677

**Project Manager:**  
**Project Name:** Fleming (959) (3-26-93)  
**Project No.:** 959

**Sample Information:**

Laboratory ID. Client ID.

30851834-001 Inf-32493-959

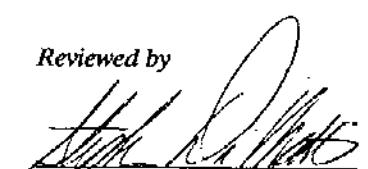
30851834-002 Eff-32493-959

Laboratory ID. Client ID.

30851834-003 QC-Report

updated in -  
computer  
4/28/93

Reviewed by

  
Stephen DiMattei  
Quality Assurance Officer

Lab Certifications

EPA ID: No. MA059  
Massachusetts: No. 313  
Maine: Reciprocity  
New York: ELAP No. 11116

Connecticut: No. PH 0515  
Florida: OA Plan No. 900437G  
New Hampshire: No. 24190-A,B  
Rhode Island: Reciprocity



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1 800 3-MATRIX

## F I N A L R E P O R T

*Client Information*

Account:	TRI-S Environmental Consulting	Project Name:	Fleming (959) (3-26-93)
Address:	P.O. Box 1760	Project Number:	959
	Brattleboro, VT 05302	Project Manager:	
		Sampler Name:	Tri-S Environmental Cons.

*Sample Information*

Lab ID:	30851834-001	Date Sampled:	03/24/93 14:24
Client Id:	Inf-32493-959	Date Received:	03/26/93 : 0
Matrix:	Water	Date Reported:	04/03/93

Analytical Parameter	Result	Unit	Detection Limit	Method No.	Analyst	Date Analyzed
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VOLATILE ORGANICS

Benzene	2,500	ug/l	5	8020	kl	03/30/93
Chlorobenzene	ND	ug/l	5	8020	kl	03/30/93
1,2-Dichlorobenzene	ND	ug/l	5	8020	kl	03/30/93
1,3-Dichlorobenzene	ND	ug/l	5	8020	kl	03/30/93
1,4-Dichlorobenzene	ND	ug/l	5	8020	kl	03/30/93
Ethylbenzene	760	ug/l	5	8020	kl	03/30/93
MTBE	1,100	ug/l	25	8020	kl	03/30/93
Toluene	5,000	ug/l	5	8020	kl	03/30/93
Xylene	4,300	ug/l	5	8020	kl	03/30/93

SURROGATE STUDIES - VOLATILES

Bromofluorobenzene (602/8020)	79	Percent	kl	03/30/93
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1 800 3-MATRIX

## FINAL REPORT

## Client Information

Account:	TRI-S Environmental Consulting	Project Name:	Fleming (959) (3-26-93)
Address:	P.O. Box 1760	Project Number:	959
	Brattleboro, VT 05302	Project Manager:	
		Sampler Name:	Tri-S Environmental Cons.

## Sample Information

Lab ID:	30851834-002	Date Sampled:	03/24/93 14:21
Client Id:	Eff-32493-959	Date Received:	03/26/93 : 0
Matrix:	Water	Date Reported:	04/03/93

Analytical Parameter	Result	Unit	Detection Limit	Method No.	Analyst	Date Analyzed
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## VOLATILE ORGANICS

Benzene	ND	ug/l	1	8020	kl	03/31/93
Chlorobenzene	ND	ug/l	1	8020	kl	03/31/93
1,2-Dichlorobenzene	ND	ug/l	1	8020	kl	03/31/93
1,3-Dichlorobenzene	ND	ug/l	1	8020	kl	03/31/93
1,4-Dichlorobenzene	ND	ug/l	1	8020	kl	03/31/93
Ethylbenzene	ND	ug/l	1	8020	kl	03/31/93
MTBE	ND	ug/l	5	8020	kl	03/31/93
Toluene	1	ug/l	1	8020	kl	03/31/93
Xylene	ND	ug/l	1	8020	kl	03/31/93

## SURROGATE STUDIES - VOLATILES

Bromofluorobenzene (602/8020)	78	Percent	kl	03/31/93
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FINAL REPORT

*Client Information*

Account:	TRI-S Environmental Consulting	Project Name:	Fleming (959) (3-26-93)
Address:	P.O. Box 1760	Project Number:	959
	Brattleboro, VT 05302	Project Manager:	
		Sampler Name:	

*Sample Information*

Lab ID:	30851834-003	Date Sampled:	03/24/93
Client Id:	QC-Report	Date Received:	03/26/93 : 0
Matrix:	Water	Date Reported:	04/03/93
Comment:	Water		

Analytical Parameter	Result	Unit	Detection	Method	Date	
			Limit	No.	Analyst	Analyzed

METHOD BLANK - VOLATILES

Method Blank	ND	ug/l	8020/602
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METHOD SUMMARIES

Volatile organic analysis is performed using H/P 5995 or 5970 GC/MS, Tekmar purge and trap, and ALS autosampler. Chromatography incorporates packed and megabore columns. Data reduction is performed on RTE 1000 and ChemStation systems. Tuning is based on BFB standards. Procedural guidelines follow EPA 624 or SW846 for all analyses. Aromatic volatiles listed in VOA 8020 are analyzed using GC/MS systems.

METHOD REFERENCES

1. Test Methods For Evaluating Solid Waste: Physical Chemical Methods. EPA SW 846. November 1986.
2. Methods For Chemical Analysis of Water and Wastes. EPA 600/4-79-200. Revised March 1983.
3. Standard Methods For Examination of Water and Wastewater. APHA-AWWA-WACF., 16th Edition. 1985.



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ANALYTICAL DATA

SUMMARY

Report Date: 03/19/93

Account: TRI-S Environmental Consulting  
Address: P.O. Box 1760  
Brattleboro, VT 05302  
802-254-3677

Project Manager:  
Project Name: Fleming (959) (3-10-93)  
Project No.: 959

**Sample Information:**

Laboratory ID, Client ID,

Laboratory ID, Client ID,

30691462-001 Inf-03893-959-MA

30691462-003 QC Report

30691462-002 Eff-03893-959-MA

updated in  
computer 4/28/93

*Reviewed by*

Stephen DiMattei  
Quality Assurance Officer

Lab Certifications

EPA ID: No. MA059  
Massachusetts: No. 313  
Maine: Reciprocity  
New York: GLAP No. 11116

Connecticut: No. PII 0515  
Florida: QA Plan No. 900437G  
New Hampshire: No. 24190-A,B  
Rhode Island: Reciprocity



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Hopkinton, MA 01748  
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F I N A L R E P O R T

*Client Information*

Account:	TRI-S Environmental Consulting	Project Name:	Fleming (959) (3-10-93)
Address:	P.O. Box 1760	Project Number:	959
	Brattleboro, VT 05302	Project Manager:	
		Sampler Name:	TRI-S Environmental Consult.

*Sample Information*

Lab ID:	30691462-001	Date Sampled:	03/08/93 10:32
Client Id:	Inf-03893-959-MA	Date Received:	03/10/93 : 0
Matrix:	Water	Date Reported:	03/19/93

Analytical Parameter	Result	Unit	Detection Limit	Method No.	Analyst	Date Analyzed
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VOLATILE ORGANICS

Benzene	2,300	ug/l	10	8020	k1	03/13/93
Chlorobenzene	ND	ug/l	10	8020	k1	03/13/93
1,2-Dichlorobenzene	ND	ug/l	10	8020	k1	03/13/93
1,3-Dichlorobenzene	ND	ug/l	10	8020	k1	03/13/93
1,4-Dichlorobenzene	ND	ug/l	10	8020	k1	03/13/93
Ethylbenzene	520	ug/l	10	8020	k1	03/13/93
MTBE	1,300	ug/l	50	8020	k1	03/13/93
Toluene	4,900	ug/l	10	8020	k1	03/13/93
Xylene	5,100	ug/l	10	8020	k1	03/13/93

SURROGATE STUDIES - VOLATILES

Bromofluorobenzene (602/8020)	98	Percent		k1	03/13/93
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F I N A L R E P O R T

*Client Information*

Account:	TRI-S Environmental Consulting	Project Name:	Fleming (959) (3-10-93)
Address:	P.O. Box 1760	Project Number:	959
	Brattleboro, VT 05302	Project Manager:	
		Sampler Name:	TRI-S Environmental Consult.

*Sample Information*

Lab ID:	30691462-002	Date Sampled:	03/08/93 10:43
Client Id:	Eff-03893-959-MA	Date Received:	03/10/93 : 0
Matrix:	Water	Date Reported:	03/19/93

Analytical Parameter	Result	Unit	Detection Limit	Method No.	Analyst	Date Analyzed
<b>VOLATILE ORGANICS</b>						
Benzene	12	ug/l	1	8020	kl	03/16/93
Chlorobenzene	ND	ug/l	1	8020	kl	03/16/93
1,2-Dichlorobenzene	ND	ug/l	1	8020	kl	03/16/93
1,3-Dichlorobenzene	ND	ug/l	1	8020	kl	03/16/93
1,4-Dichlorobenzene	ND	ug/l	1	8020	kl	03/16/93
Ethylbenzene	ND	ug/l	1	8020	kl	03/16/93
MTBE	310	ug/l	5	8020	kl	03/16/93
Toluene	1	ug/l	1	8020	kl	03/16/93
Xylene	ND	ug/l	1	8020	kl	03/16/93
<b>SURROGATE STUDIES - VOLATILES</b>						
Bromofluorobenzene (602/8020)	93	Percent			kl	03/16/93



Matrix Analytical, Inc.  
106 South Street  
Hopkinton, MA 01748  
1 800 3-MATRIX

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F I N A L R E P O R T

Client Information

Account:	TRI-S Environmental Consulting	Project Name:	Fleming (959) (3-10-93)
Address:	P.O. Box 1760	Project Number:	959
	Brattleboro, VT 05302	Project Manager:	
		Sampler Name:	

Sample Information

Lab ID:	30691462-003	Date Sampled:	03/08/93 :
Client Id:	OC-Report	Date Received:	03/10/93 : 0
Matrix:	Water	Date Reported:	03/19/93
Comment:	Water		

Analytical Parameter	Result	Unit	Detection Limit	Method No.	Analyst	Date Analyzed
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METHOD BLANK - VOLATILES

Method Blank	ND	ug/l	8020/602
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METHOD SUMMARIES

Volatile organic analysis is performed using II/P 5995 or 5970 GC/MS, Tekmar purge and trap, and ALS autosampler. Chromatography incorporates packed and megabore columns. Data reduction is performed on RTE 1000 and ChemStation systems. Tuning is based on BFB standards. Procedural guidelines follow EPA 624 or SW846 for all analyses. Aromatic volatiles listed in VOA 8020 are analyzed using GC/MS systems.

METHOD REFERENCES

1. Test Methods For Evaluating Solid Waste: Physical Chemical Methods. EPA SW 846, November 1986.
2. Methods For Chemical Analysis of Water and Wastes. EPA 600/4-79-200. Revised March 1983.
3. Standard Methods For Examination of Water and Wastewater. APHA-AWWA-WACF, 16th Edition, 1985.

## CHAIN-OF-CUSTODY RECORD

CLIENT: TRI-S Environmental Consulting (TEC)			
ADDRESS: PO BOX 1760 205 Main St.			
Brattleboro VT 05302			
CLIENT CONTACT/PHONE: 802-254-3677			
PROJECT NAME: Fleming		NO.: 959	
LAB CONTACT: Michelle Higgins		EXT. NO.:	
LAB ID (LAB USE ONLY)	SAMPLE ID / CLIENT DESCRIPTION	TYPE*	COLLECTION DATE / TIME
	Inf-03893-959-MA GW	3/8/93 10:32	2
	EFF-03893-959-MA GW	3/8/93 10:43	2
<p>3/17/93 On effluent sample. Report out results from vial without the piece of matter in it. per C. Blazej (MBP)</p>			
TOTALS: 4			

\*TYPE: W = water; GW = groundwater; DW = drinking water; SW = surface water; S = soil; SED = sediment; SL = sludge; DS = drum sample; O = oil; WI = wipe; X = other (please describe)

SPECIAL PRICE QUOTE FOR THIS PROJECT? NO YES NUMBER: SPECIAL INSTRUCTIONS / NOTES: PO #1424

MATRIX ANALYTICAL USE ONLY		RELINQUISHED BY	RECEIVED BY	DATE	TIME	COMMENTS
Samples: 1) were shipped / hand-delivered / ambient / chilled 2) were received preserved / unpreserved 3) were received intact / broken / leaking 4) were received within / past holding times 5) agreed with COC form / discrepancies were present 6) were sealed / not sealed with COC tape; tape was broken / intact 7) were in cooler sealed / not sealed with COC tape; tape was broken / intact		Collier J. M. S. Wm Anderson CRB	Donna McCall Wm Anderson D. Ronengard	3/10/93 3/10/93 3/10/93	11:00  4:30	
NOTES:		SAMPLER'S INITIALS		MATRIX ANALYTICAL, INC. 106 South Street Hopkinton, MA 01748 1 (800) 3-MATRIX		

RECEIVED 3/17/93

PAGE 1 OF 1

30691462-001



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A N A L Y T I C A L   D A T A

S U M M A R Y

Report Date: 02/12/93

Account: TRI-S Environmental Consulting  
Address: P.O. Box 1760  
Brattleboro, VT 05302  
802-254-3677

Project Manager:  
Project Name: Fleming (959) (1-29-93)  
Project No.: 959

**Sample Information:**

Laboratory ID: Client ID:

30290700-001 Inf-012893-959-MA  
30290700-002 Eff-012893-959-MA

Laboratory ID: Client ID:

30290700-003 QC Report

Updated in Computer  
Data Base 3/31/93

Reviewed by

Stephen DiMattei  
Quality Assurance Officer

Lab Certifications

EPA ID: No. MA059  
Massachusetts: No. 313  
Maine: Reciprocity  
New York: ELAP No. 11116

Connecticut: No. PH 0515  
Florida: QA Plan No. 900437G  
New Hampshire: No. 24190-A,B  
Rhode Island: Reciprocity



RECEIVED FEB 18 1993

Matrix Analytical, Inc.  
106 South Street  
Hopkinton, MA 01748  
1 800 3-MATRIX

## FINAL REPORT

Client Information

Account:	TRI-S Environmental Consulting	Project Name:	Fleming (959) (1-29-93)
Address:	P.O. Box 1760 Brattleboro, VT 05302	Project Number:	959
		Project Manager:	
		Sampler Name:	TRI-S Environmental Cons.

Sample Information

Lab ID:	30290700-001	Date Sampled:	01/28/93 16:10
Client Id:	Inf-012893-959-MA	Date Received:	01/29/93 :0
Matrix:	Water	Date Reported:	02/12/93

Analytical Parameter	Result	Unit	Detection Limit	Method No.	Analyst	Date Analyzed
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VOLATILE ORGANICS

Benzene	3,600	ug/l	1	8020	bs	02/10/93
Chlorobenzene	ND	ug/l	1	8020	bs	02/10/93
1,2-Dichlorobenzene	ND	ug/l	1	8020	bs	02/10/93
1,3-Dichlorobenzene	ND	ug/l	1	8020	bs	02/10/93
1,4-Dichlorobenzene	ND	ug/l	1	8020	bs	02/10/93
Ethylbenzene	1,100	ug/l	1	8020	bs	02/10/93
MTBE	4,000	ug/l	5	8020	bs	02/10/93
Toluene	7,300	ug/l	1	8020	bs	02/10/93
Xylene	5,300	ug/l	1	8020	bs	02/10/93

SURROGATE STUDIES - VOLATILES

Bromofluorobenzene (602/8020)	103	Percent	bs	02/10/93
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106 South Street  
Hopkinton, MA 01748  
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F I N A L R E P O R T

*Client Information*

Account:	TRI-S Environmental Consulting	Project Name:	Fleming (959) (1-29-93)
Address:	P.O. Box 1760	Project Number:	959
	Brattleboro, VT 05302	Project Manager:	
		Sampler Name:	TRI-S Environmental Cons.

*Sample Information*

Lab ID:	30290700-002	Date Sampled:	01/28/93 16:22
Client Id:	Eff-012893-959-MA	Date Received:	01/29/93 :0
Matrix:	Water	Date Reported:	02/12/93

Analytical Parameter	Result	Unit	Detection Limit	Method No.	Analyst	Date Analyzed
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VOLATILE ORGANICS

Benzene	1	ug/l	1	8020	bs	02/10/93
Chlorobenzene	ND	ug/l	1	8020	bs	02/10/93
1,2-Dichlorobenzene	ND	ug/l	1	8020	bs	02/10/93
1,3-Dichlorobenzene	ND	ug/l	1	8020	bs	02/10/93
1,4-Dichlorobenzene	ND	ug/l	1	8020	bs	02/10/93
Ethylbenzene	ND	ug/l	1	8020	bs	02/10/93
MTBE	92	ug/l	5	8020	bs	02/10/93
Toluene	2	ug/l	1	8020	bs	02/10/93
Xylene	2	ug/l	1	8020	bs	02/10/93

SURROGATE STUDIES - VOLATILES

Bromofluorobenzene (602/8020)	89	Percent	bs	02/10/93
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Matrix Analytical, Inc.  
106 South Street  
Hopkinton, MA 01748  
1 800 3-MATRIX

## F I N A L R E P O R T

Client Information

Account:	TRI-S Environmental Consulting	Project Name:	Fleming (959) (1-29-93)
Address:	P.O. Box 1760	Project Number:	959
	Brattleboro, VT 05302	Project Manager:	
		Sampler Name:	

Sample Information

Lab ID:	30290700-003	Date Sampled:	01/28/93 :
Client Id:	QC-Report	Date Received:	01/29/93 :0
Matrix:	Water	Date Reported:	02/12/93
Comment:	Water		

Analytical Parameter	Result	Unit	Detection Limit	Method No.	Analyst	Date Analyzed

METHOD BLANK - VOLATILES

Method Blank	ND	ug/l	8020/602
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METHOD SUMMARIES

Volatile organic analysis is performed using H/P 5995 or 5970 GC/MS, Tekmar purge and trap, and ALS autosampler. Chromatography incorporates packed and megabore columns. Data reduction is performed on RTE 1000 and ChemStation systems. Tuning is based on BFB standards. Procedural guidelines follow EPA 624 or SW846 for all analyses. Aromatic volatiles listed in VOA 8020 are analyzed using GC/MS systems.

METHOD REFERENCES

1. Test Methods For Evaluating Solid Waste: Physical Chemical Methods. EPA SW 846. November 1986.
2. Methods For Chemical Analysis of Water and Wastes. EPA 600/4-79-200. Revised March 1983.
3. Standard Methods For Examination of Water and Wastewater. APHA-AWWA-WACB, 16th Edition. 1985.

**CHAIN-OF-CUSTODY RECORD**

MATRIX ANALYTICAL USE ONLY	RELINQUISHED BY	RECEIVED BY	DATE	TIME	COMMENTS
Samples: 1) were shipped / hand-delivered / ambient / chilled 2) were received preserved / unpreserved 3) were received intact / broken, / leaking 4) were received within / past holding times 5) agreed with COC form / discrepancies were present 6) were sealed / not sealed with COC tape; tape was broken / intact 7) were in cooler sealed / not sealed with COC tape; tape was broken / intact	<i>Colin Blagg</i> S.M.S.B.	<i>Donna M Scott</i> <i>Wm Anderson</i>	1/29/93	11:00 a.m.	
NOTES:	Wm Anderson SAMPLER'S INITIALS <i>CRB</i>	Jamie L. Cheney	1-29-93	5:00	MATRIX ANALYTICAL, INC. 106 South Street Hopkinton, MA 01748 (800) 3-MATRIX
					30290700-001
					PAGE <u>1</u> OF <u>1</u>



## ANALYTICAL DATA

## SUMMARY

RECEIVED JAN 29 1993

Report Date: 01/26/93

Account: TRI-S Environmental Consulting  
Address: P.O. Box 1760  
Brattleboro, VT 05302  
802-254-3677

Project Manager:  
Project Name: Fleming Oil (959) (1-15-93)  
Project No.: 959

## Sample Information:

Laboratory ID Client ID:

30150347-001 011393-Inf-959  
30150347-002 011393-Eff-959

Laboratory ID Client ID:

30150347-003 QC-Report

3/31/93  
updated in  
computer Database

## Reviewed by

Stephen DiMattei  
Quality Assurance OfficerLab Certifications

EPA ID: No. MA059  
Massachusetts: No. 313  
Maine: Reciprocity  
New York: ELAP No. 11116

Connecticut: No. PH 0515  
Florida: QA Plan No. 900437G  
New Hampshire: No. 24190-A,B  
Rhode Island: Reciprocity



Matrix Analytical, Inc.  
106 South Street  
Hopkinton, MA 01748  
1 800 3-MATRIX

F I N A L R E P O R T

RECEIVED JAN 29 1993

*Client Information*

Account:	TRI-S Environmental Consulting	Project Name:	Fleming Oil (959) (1-15-93)
Address:	P.O. Box 1760	Project Number:	959
	Brattleboro, VT 05302	Project Manager:	
		Sampler Name:	TRI-S Environmental Consult.

*Sample Information*

Lab ID:	30150347-001	Date Sampled:	01/13/93 12:55
Client Id:	011393-Inf-959	Date Received:	01/15/93 : 0
Matrix:	Water	Date Reported:	01/26/93

Analytical Parameter	Result	Unit	Detection Limit	Method No.	Analyst	Date Analyzed
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VOLATILE ORGANICS

Benzene	1,700	ug/l	10	8020	bs	01/23/93
Chlorobenzene	ND	ug/l	10	8020	bs	01/23/93
1,2-Dichlorobenzene	ND	ug/l	10	8020	bs	01/23/93
1,3-Dichlorobenzene	ND	ug/l	10	8020	bs	01/23/93
1,4-Dichlorobenzene	ND	ug/l	10	8020	bs	01/23/93
Ethylbenzene	1,100	ug/l	10	8020	bs	01/23/93
MTBE	2,000	ug/l	50	8020	bs	01/23/93
Toluene	4,200	ug/l	10	8020	bs	01/23/93
Xylene	2,800	ug/l	10	8020	bs	01/23/93

SURROGATE STUDIES - VOLATILES

Bromofluorobenzene (602/8020)	104	Percent	bs	01/23/93
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Matrix Analytical, Inc.  
106 South Street  
Hopkinton, MA 01748  
1 800 3-MATRIX

F I N A L R E P O R T

I RECEIVED JAN 29 1993

*Client Information*

Account:	TRI-S Environmental Consulting	Project Name:	Fleming Oil (959) (1-15-93)
Address:	P.O. Box 1760 Brattleboro, VT 05302	Project Number:	959
		Project Manager:	
		Sampler Name:	TRI-S Environmental Consult.

*Sample Information*

Lab ID:	30150347-002	Date Sampled:	01/13/93 12:56
Client Id:	011393-Eff-959	Date Received:	01/15/93 : 0
Matrix:	Water	Date Reported:	01/26/93

Analytical Parameter	Result	Unit	Detection	Method No.	Analyst	Date Analyzed
			Limit			

VOLATILE ORGANICS

Benzene	ND	ug/l	1	8020	sd	01/22/93
Chlorobenzene	ND	ug/l	1	8020	sd	01/22/93
1,2-Dichlorobenzene	ND	ug/l	1	8020	sd	01/22/93
1,3-Dichlorobenzene	ND	ug/l	1	8020	sd	01/22/93
1,4-Dichlorobenzene	ND	ug/l	1	8020	sd	01/22/93
Ethybenzene	ND	ug/l	1	8020	sd	01/22/93
MTBE	ND	ug/l	5	8020	sd	01/22/93
Toluene	ND	ug/l	1	8020	sd	01/22/93
Xylene	ND	ug/l	1	8020	sd	01/22/93

SURROGATE STUDIES - VOLATILES

Bromofluorobenzene (602/8020)	82	Percent	sd	01/22/93
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Matrix Analytical, Inc.  
106 South Street  
Hopkinton, MA 01748  
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F I N A L R E P O R T

RECEIVED JAN 29 1993

*Client Information*

Account: TRI-S Environmental Consulting  
Address: P.O. Box 1760  
Brattleboro, VT 05302

Project Name: Fleming Oil (959) (1-15-93)  
Project Number: 959  
Project Manager:  
Sampler Name:

*Sample Information*

Lab ID:	30150347-003	Date Sampled:	01/13/93 :
Client Id:	QC-Report	Date Received:	01/15/93 :0
Matrix:	Water	Date Reported:	01/26/93
Comment:	Water		

Analytical Parameter	Result	Detection Unit	Method Limit	Method No.	Analyst	Date Analyzed
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METHOD BLANK - VOLATILES

Method Blank ND ug/l 8020/602

METHOD SUMMARIES

Volatile organic analysis is performed using H/P 5995 or 5970 GC/MS, Tekmar purge and trap, and ALS autosampler. Chromatography incorporates packed and megabore columns. Data reduction is performed on RTE 1000 and ChemStation systems. Tuning is based on BFB standards. Procedural guidelines follow EPA 624 or SW846 for all analyses. Aromatic volatiles listed in VOA 8020 are analyzed using GC/MS systems.

METHOD REFERENCES

1. Test Methods For Evaluating Solid Waste: Physical Chemical Methods. EPA SW 846. November 1986.
2. Methods For Chemical Analysis of Water and Wastes. EPA 600/4-79-200. Revised March 1983.
3. Standard Methods For Examination of Water and Wastewater. APHA-AWWA-WACF, 16th Edition. 1985.

## JULIA J. FROSTOLY FLORES

CLIENT: TRI-S Environmental Consulting												
ADDRESS: P.O. Box 1760												
205 Main Street, Brattleboro, VT. 05302												
CLIENT CONTACT/PHONE (609) 254 -3677												
PROJECT NAME: Fleeting Oil	NO.: 959											
LAB CONTACT: Michelle Higgins	EXT. NO.:											
SAMPLE ID (LAB USE ONLY)	SAMPLE ID / CLIENT DESCRIPTION	TYPE*	COLLECTION DATE / TIME	ANALYSES REQUESTED								
	011393-INF-959	GW	1/13/93 12:55	2							TOTAL 3	
	011393-EFF-959	GW	1/13/93 12:56	2							2	
											2	
											4	
TOTALS: 4												
TYPE: W = water; GW = groundwater; DW = drinking water; SW = surface water; S = soil; SED = sediment; SL = sludge; DS = drum sample; O = oil; WI = wipe; X = other (please describe)	SPECIAL PRICE QUOTE FOR THIS PROJECT?			NO	YES	NUMBER:						
SPECIAL INSTRUCTIONS / NOTES:												

MATRIX ANALYTICAL USE ONLY	REUNQUISHED BY	RECEIVED BY	DATE	TIME	COMMENTS
Samples: 1) were shipped / hand-delivered / ambient / chilled 2) were received preserved / unpreserved 3) were received intact / broken / leaking 4) were received within / past holding times 5) agreed with COC form / discrepancies were present 6) were sealed / not sealed with COC tape; tape was broken / intact 7) were in cooler sealed / not sealed with COC tape; tape was broken / intact	Krisle Jagger D.M.S.	Donna McScott Wm Anderson Wm Anderson K. Lorenzini	1/15/93 1-15-93	10:30A. 5:00	
NOTES:	SAMPLER'S INITIALS	MATRIX ANALYTICAL, INC. 100 South Street Belpreton, WA 01746 1 (800) 3-MATRIX			
	CRB				

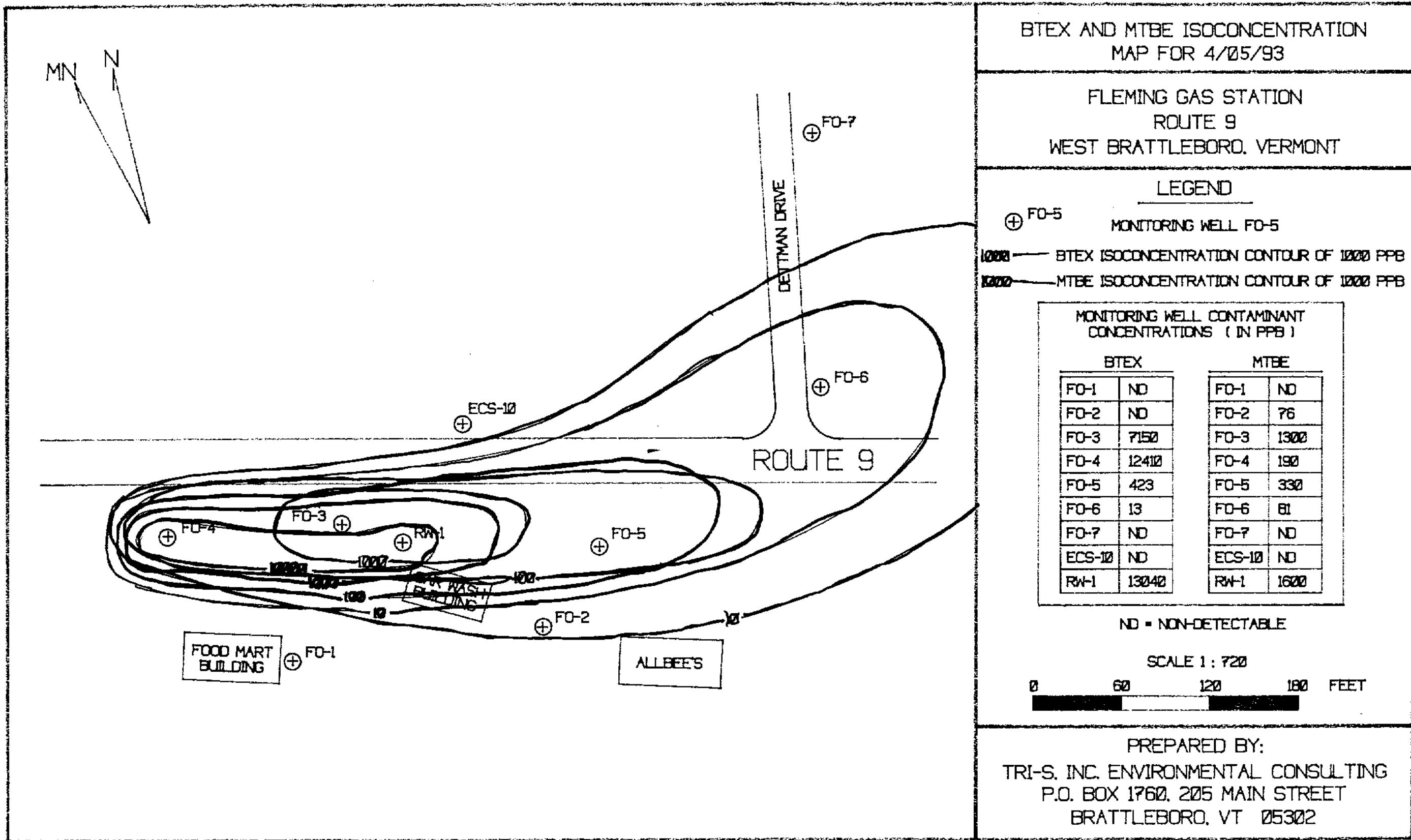
RECEIVED JAN 29 1993

PAGE 1 OF 1

30150347-001

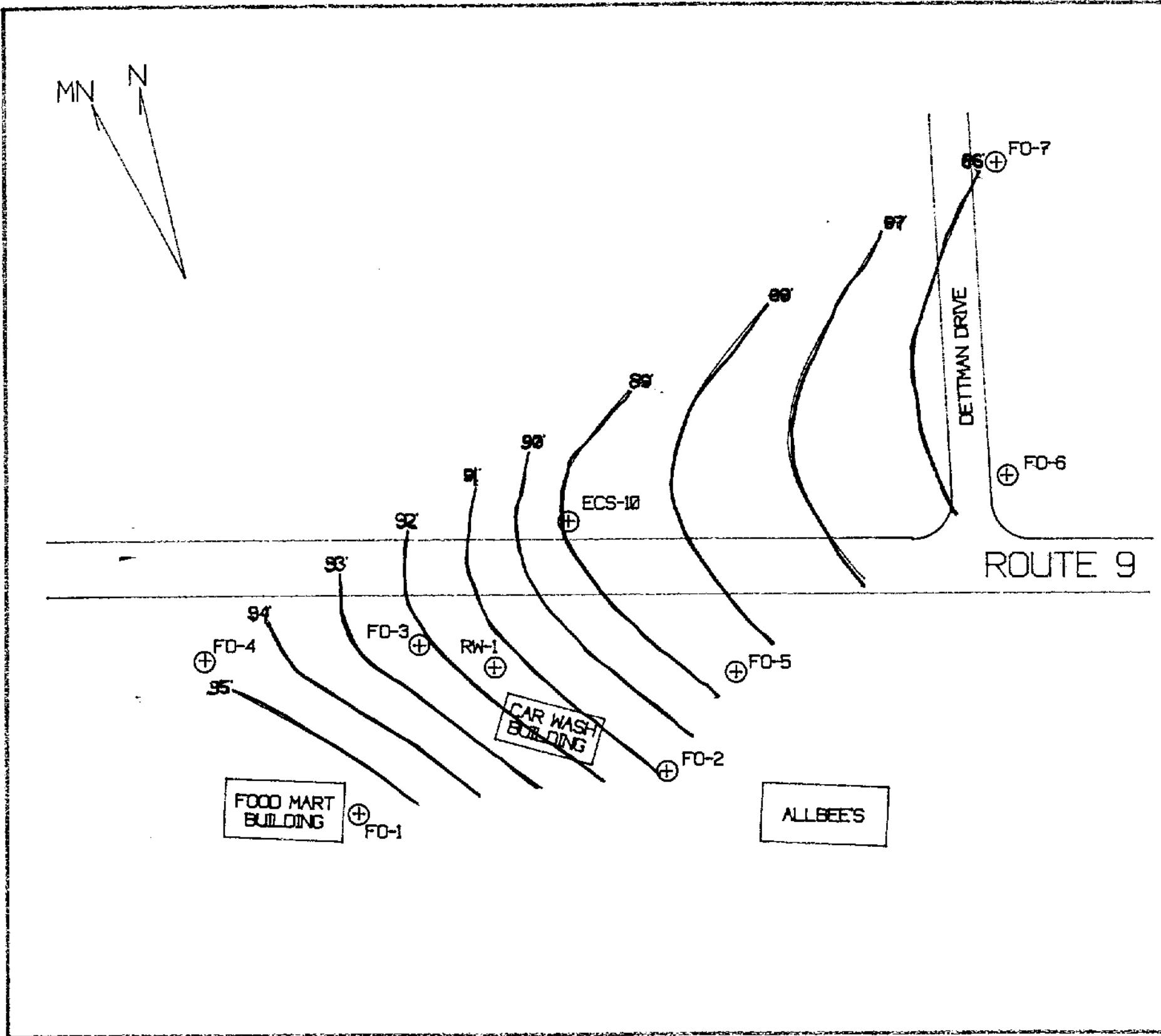
**APPENDIX B**

**BTEX AND MTBE ISOCONCENTRATION MAP**



**APPENDIX C**

**GROUNDWATER POTENTIOMETRIC MAPS**



GROUNDWATER POTENTIOMETRIC  
MAP FOR 1/13/93

FLEMING GAS STATION  
ROUTE 9  
WEST BRATTLEBORO, VERMONT

LEGEND

MONITORING WELL FO-5

GROUNDWATER CONTOUR AT 95 FEET  
(CONTOUR INTERVAL OF 1 FOOT)

MONITORING WELL GROUNDWATER ELEVATIONS (IN FEET)

FO-1	95.97
FO-2	90.96
FO-3	92.20
FO-4	94.77
FO-5	88.39
FO-6	85.43
FO-7	85.79
ECS-10	88.86
RW-1	NM

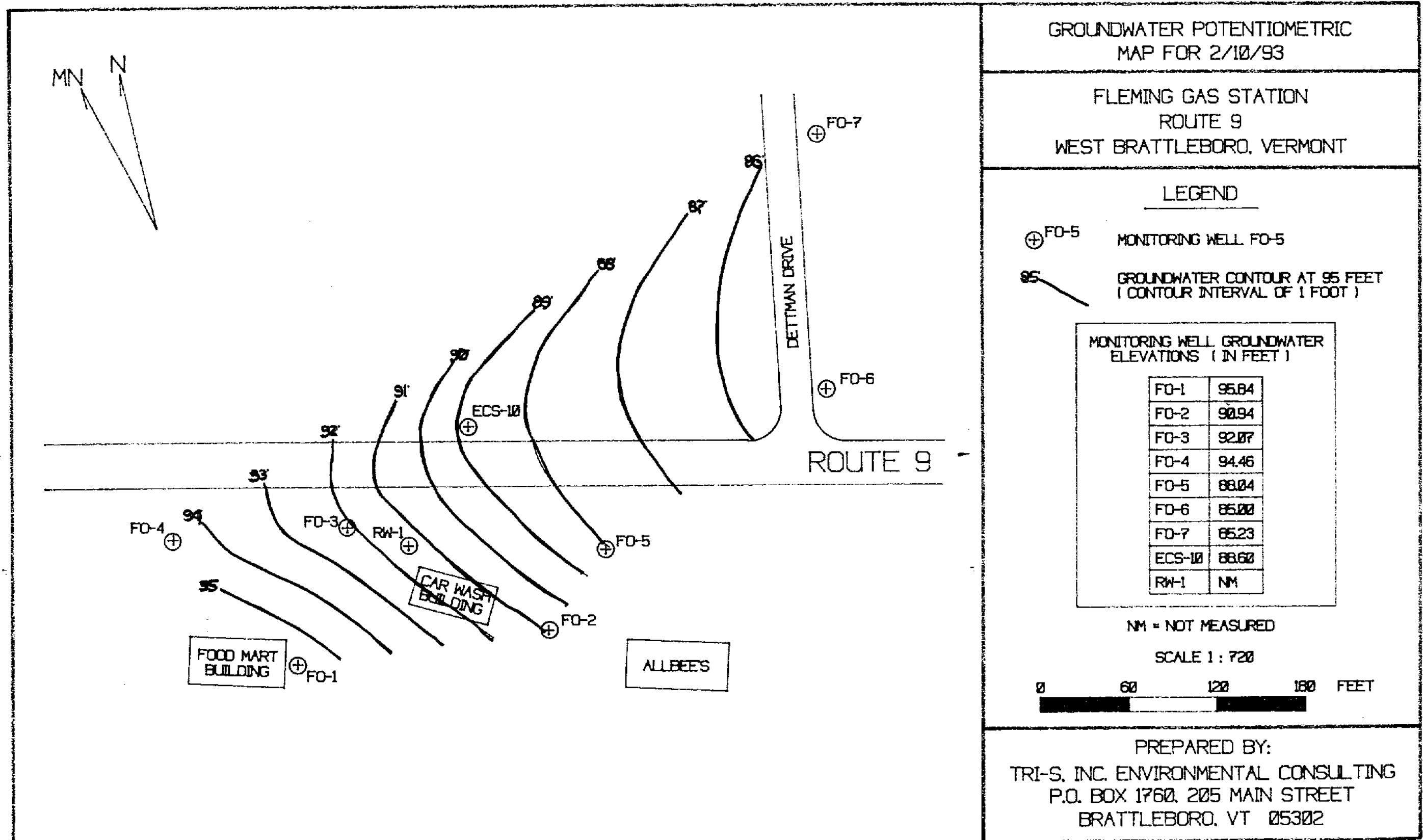
NM = NOT MEASURED

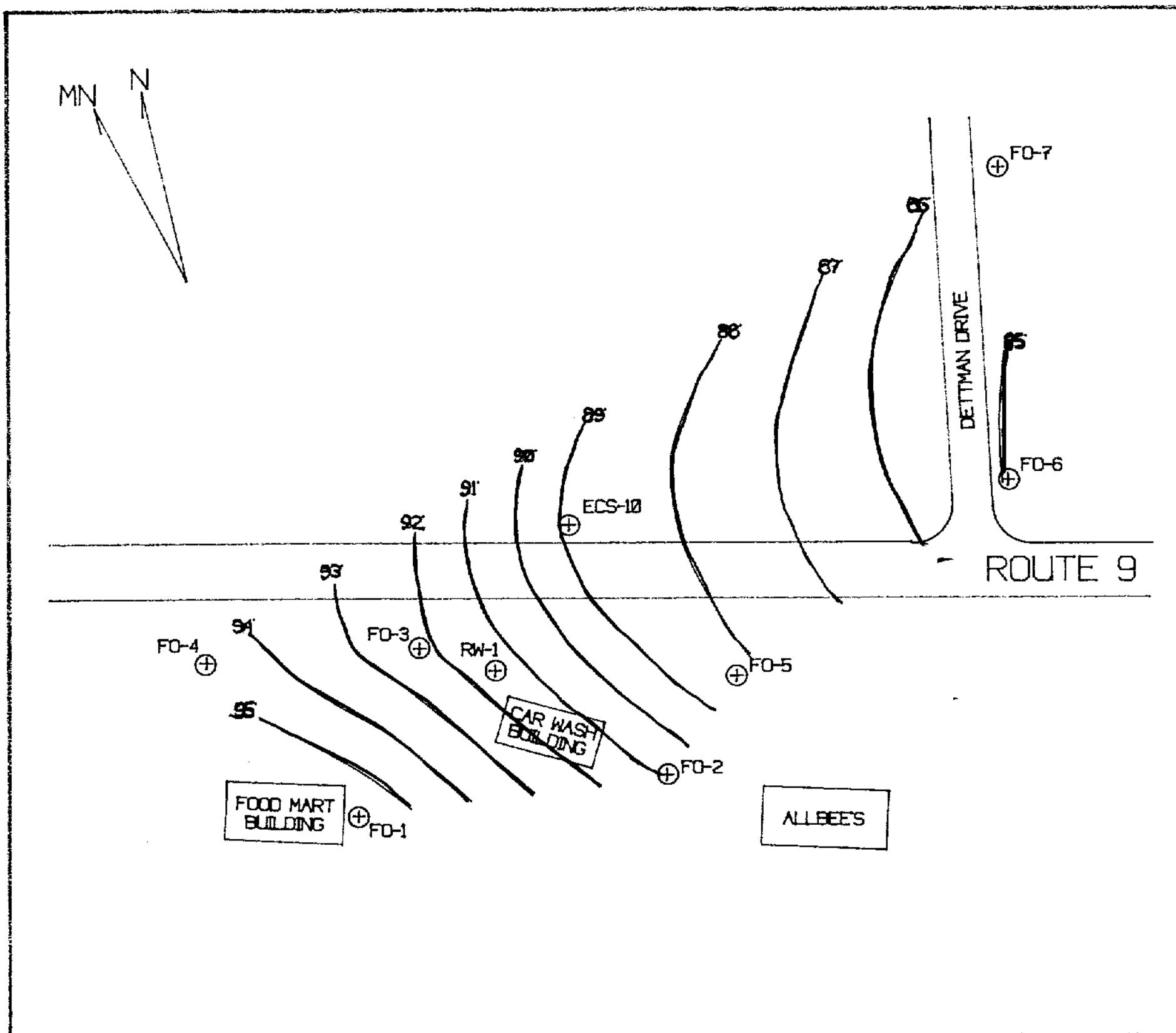
SCALE 1 : 720

0 60 120 180 FEET

PREPARED BY:

TRI-S. INC. ENVIRONMENTAL CONSULTING  
P.O. BOX 1760, 205 MAIN STREET  
BRATTLEBORO, VT 05302





GROUNDWATER POTENTIOMETRIC  
MAP FOR 3/02/93

FLEMING GAS STATION  
ROUTE 9  
WEST BRATTLEBORO, VERMONT

LEGEND

MONITORING WELL FO-5

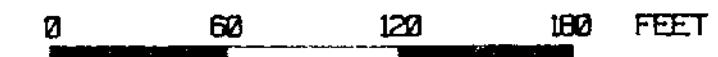
GROUNDWATER CONTOUR AT 95 FEET  
(CONTOUR INTERVAL OF 1 FOOT)

MONITORING WELL GROUNDWATER  
ELEVATIONS (IN FEET)

FO-1	95.85
FO-2	NM
FO-3	92.25
FO-4	94.55
FO-5	88.22
FO-6	84.93
FO-7	85.10
ECS-10	NM
RW-1	NM

NM = NOT MEASURED

SCALE 1 : 720



PREPARED BY:

TRI-S. INC. ENVIRONMENTAL CONSULTING  
P.O. BOX 1760, 205 MAIN STREET  
BRATTLEBORO, VT 05302